

REMARKS

In response to the above-identified Office Action, Applicants seek reconsideration thereof. In this response, Applicants do not amend, cancel or add any new claims. Accordingly, Claims 1-14 are pending.

I. Claims Rejected Under 35 U.S.C. §103(a)

The Examiner rejects Claims 1-14 35 U.S.C. 103(a) as being obvious over U.S. Patent No. 5,444,537 issued to Yoshimura et al. ("Yoshimura"). Applicants respectfully traverse the rejection.

To render a claim obvious, the relied upon references must teach or suggest every limitation of the claim such that the invention as a whole would have been obvious at the time the invention was made to one skilled in the art. Among other elements, independent Claim 1 includes a method comprising capturing an intensity at a location and converting the intensity into a measurement of distance to the location relative to a reference point independently of data from other pixels.

In making the rejection, the Examiner characterizes Yoshimura as showing the position of a point made by determining the intensity of detected light at the point and the distance determination is made relative to a reference point independently of data from other points. See Paper No. 7, page 2 (citing Yoshimura, Col. 4, line 56 – Col. 5, line 37). Applicants have reviewed Yoshimura and respectfully disagree with the Examiner's characterization of Yoshimura.

Yoshimura discloses a method and apparatus for shape detection. See Yoshimura, Col. 3, lines 15-20. The shape of an object is detected by projecting a plurality of light beams of mutually different patterns onto an identical spot of an object and receiving an image of the reflected beams from the spot at a position detecting means. See Yoshimura, Col. 3, lines 21-31. To determine the position of the spot, a ratio of intensity of the reflected light (I_C/I_D) is obtained from outputs I_C and I_D of the position detecting means and compared to a point on a reference plane to find the location of the spot with respect to the point on the reference plane. See Yoshimura, Col. 5, lines 14-21.

The ratio of intensity (I_C/I_D) is obtained from outputs I_C and I_D . These two outputs are from two different beams of light, A and B, directed at two different positions, X_1 and X_2 . See Yoshimura, Col. 4, lines 24-33. Light reflected from at least two different points necessitates the

use of at least two different pixels in computing the ratio of intensity. Therefore, comparing this ratio to a reference point cannot be independent since the ratio is a comparison of two different pixels and, by definition, are dependent upon one another. Thus, the comparison of two pixels in establishing a ratio of intensity and comparing this ratio to a reference point excludes the possibility that the measurement of distance is independent of data from other pixels since comparing data from at least two pixels to establish a ratio cannot be independent of each other.

Therefore, Yoshimura does not teach each of the elements of Claim 1 since Yoshimura fails to teach at least capturing an intensity at a location and converting the intensity into a measurement of distance to the location relative to a reference point independently of data from other pixels. Thus, Yoshimura fails to teach or suggest each of the elements of Claim 1. Accordingly, Applicants respectfully request withdrawal of the rejection of Claim 1.

Claims 2-5 depend from Claim 1 and contain all of the limitations thereof. Therefore, Claims 2-5 are not obvious over Yoshimura at least for the same reasons as Claim 1. Additionally, the Examiner has failed to address the individual limitations of the dependent claims as the law requires. Accordingly, Applicants respectfully request withdrawal of the rejection of Claims 2-5.

Regarding Claim 6, among other elements, Claim 6 includes capturing an intensity at a location on a surface in an elementary group of pixels and converting the intensity into a measurement of distance to the location independently of data from other pixels. Applicant's specification describes that an elementary group of pixels may be treated as an element with the aggregate captured intensity used to determine the depth measurement without regard to an energy distribution among the pixels in the group, yielding one measurement per group of elementary group of pixels. See Specification, ¶ 0033. This single intensity per group of elementary group of pixels is independent of data from other pixels similar to Claim 1. Therefore, the discussion above regarding Yoshimura's failure to teach or suggest capturing an intensity at a location and converting the intensity into a measurement of distance to a location relative to a reference point independently of data from other pixels is equally applicable to Claim 6.

In addition, Yoshimura does not teach capturing an intensity at a location on a surface in an elementary group of pixels since Yoshimura's ratio of intensity compares the intensity of individual pixels, not the intensity of an elementary group of pixels. Thus, Yoshimura fails to teach or suggest each of the elements of Claim 6. Therefore, the Examiner has not established a proper rejection of Claim 6. Accordingly, Applicants respectfully request withdrawal of the rejection of Claim 6.

Claims 7-10 depend from Claim 6 and contain all of the limitations thereof. Therefore, Claims 7-10 are not obvious at least for the same reasons as Claim 6. Additionally, the Examiner has failed to address the individual limitations of the dependent claims as the law requires. Accordingly, Applicants respectfully request withdrawal of the rejection of Claims 7-10.

Regarding Claim 11, among other elements, Claim 11 includes capturing a spectral energy distribution from a location on a surface in a single pixel and converting the spectral energy distribution into a measurement of distance to the location independently of data from other pixels similar to Claim 1. Without addressing whether Yoshimura captures spectral density, from the discussion above it is clear that Yoshimura fails to teach or suggest depth determinations from data captured in a single pixel independent of other pixels. Therefore, Yoshimura fails to teach each of the elements of Claim 11. Accordingly, Applicants respectfully request withdrawal of the rejection of Claim 11.

Regarding Claim 12, among other elements, Claim 12 includes observing a variation of an electrical signal at a single pixel and converting the variation to a measure of distance to a location independently of data from other pixels similar to Claim 1. Without discussing whether Yoshimura observes a variation of an electrical signal at a single pixel on an ISA, from the discussion above it is clear that Yoshimura fails to teach or suggest depth determinations from data observed at a single pixel independent of other pixels. Therefore, Yoshimura fails to teach or suggest each of the elements of Claim 12. Accordingly, Applicants respectfully request withdrawal of the rejection of Claim 12.

Regarding Claim 13, among other elements, Claim 13 includes observing a variation of an electrical signal at an elementary group of pixels and converting the variation to a measure of

distance to a location independently of data from other pixels. Therefore, the discussion above regarding Yoshimura's failure to teach capturing an intensity at a location and converting the intensity into a measurement of distance to the location relative to a reference point independently of data from other pixels in Claim 1 is equally applicable to Claim 13. Moreover, the discussion above regarding Yoshimura's failure to teach an elementary group of pixels in Claim 6 is also equally applicable to Claim 13.

Thus, Yoshimura fails to teach or suggest each of the elements of Claim 13. Therefore, the Examiner has not established a proper rejection of Claim 13. Accordingly, Applicants respectfully request withdrawal of the rejection of Claim 13.

Among other elements, Claim 14 includes a method comprising capturing an intensity at a location on a surface in a single pixel of a linear image sensing array (ISA) and converting the intensity into a measurement of distance to the location relative to a reference point independently of data from other pixels of the linear ISA similar to Claim 1. Therefore, the discussion above regarding Yoshimura's failure to teach capturing an intensity at a location and converting the intensity into a measurement of distance to the location relative to a reference point independently of data from other pixels in Claim 1 is equally applicable to a similar recitation in Claim 14. Thus, the Yoshimura fails to teach or suggest each of the elements of Claim 14. Therefore, the Examiner has not established a proper rejection of Claim 14. Accordingly, Applicants respectfully request withdrawal of the rejection of Claim 14.

Moreover, in reviewing Yoshimura, Applicants have been unable to discern any section(s) that teach a linear ISA. Rather, Applicants posit that since the second beam of Yoshimura is spatially dispersed from the first beam, a linear sensor is unlikely to capture the second beam, rendering it ineffective for use in the system of Yoshimura. For this further reason, the rejection of Claim 24 should be withdrawn.

CONCLUSION

In view of the foregoing, it is believed that all claims now pending are now in condition for allowance and such action is earnestly solicited at the earliest possible date. If there are any additional fees due in connection with the filing of this response, please charge those fees to our Deposit Account No. 02-2666. Questions regarding this matter should be directed to the undersigned at (310) 207-3800.

Respectfully submitted,

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I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop Non-Fee Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on 9/26/03

Nadya Gordon 9/26/03
Nadya Gordon Date